

# Top drawer!

This small two-drawer chest is part of a group of pieces I was commissioned to make recently. I'd already tackled two nests of tables, and this cabinet had to complement them and have the chunky look of solid wood. Well, I thought that would be easy; I'd just make it out of solid oak!

There are several ways of making cabinets look as if they have solid, chunky legs without using solid timber, but with this cabinet we decided to use it anyway. This decision was made easier as I already had some suitable oak in stock which I'd bought from a local farmer some years earlier. The grain was a little wild, but it would certainly add character to the piece. When I mentioned this to our clients, they really liked the idea of having a piece of furniture made from local

Shropshire oak, since they would soon be moving away from the area and said it would remind them of home!

## Alternative lengths

This cabinet has a relatively simple construction. I've used my Festool Domino for all the joints, and the dimensions given in the cutting list reflect this. However, I appreciate that most readers won't have such an expensive tool, so where a part would otherwise need tenons, I have indicated in brackets how much extra length I would allow in order to cut them. The tenons are 30mm long on the side rails and 25mm long on the other components.

## Preparing the parts

I had a length of 70mm square oak for the front legs, but didn't have enough for the back legs as well so I glued up two pieces to get the size we needed, **photo 1**. When this joint is aligned front to back, it will be invisible from the front and side. I then cut the rest of the parts to length and machined them to size. As the rest of the unit is solid timber, I decided not to use veneered boards for the two side panels but to glue up two solid pieces instead, **photo 2**. Once the glue had set, the panels were sanded flat and given several coats of finish.

## Stopped grooves

Next, I cut the 12mm deep grooves for the side panels in the legs, **photo 3**. This is one process that's made more complicated when using dowel or Domino construction.

1

The back legs are glued together from two pieces of matching timber





With traditional tenons, the groove can be cut along the entire length of the leg, including where the rails will be mortised into it. This is because the tenons on the rails can be cut to the same thickness as the panel. However when using dowels or Dominos, the groove has to be stopped well short of the joint unless the panel is much thinner than the Domino; otherwise the strength of the joint will be compromised.

The clamp shown in the photo is vital for two reasons. It acts as a stop, allowing a precise start to the groove. It also prevents the workpiece from being fired to the right as the groove is cut, potentially dragging vulnerable fingers into the cutter.

Grooves were then machined centrally

into each of the side rails to house the side panels before the mortises were cut in the rails and legs. The two side frames could now be assembled. **photo 4.** Check that there is some space in the grooves to allow for any expansion in the panels. To make sure they don't rattle if they shrink, fit a small piece of soft foam into the groove at each side.

### Three frames remaining

The two sides are connected by three internal frames which act as both drawer runners and kickers: the latter run above the drawer and prevent it from tipping forward when it's opened. As only the front faces of the frames will be seen, I took the chance to use up some of our off-cuts – including

some which had a dark stain, probably caused by iron contamination during the drying process. The top and bottom frames are 468mm deep and run the full depth of the cabinet; the middle frame is 10mm shallower at 455mm. **photo 5.**

### More grooves required

Once the frames were assembled, the next step was to machine grooves to house the 4mm plywood back panel. I cut a 4mm wide groove 6mm in from the rear face of each of the back legs, and a similar groove in the inner faces of the top and bottom frames. **photo 6.**

Next I cut the mortises in the legs, **photo 7**, to correspond with the positions of the Dominos in the internal frames, shown in 0.

2

Glue up the side panels using three cramps to ensure the board stays flat.



3 Cut a stopped groove for the panel in each leg using a cramp as a stop.

4

Assemble the side frames with space in the grooves to allow for expansion.



6

The middle frame (on top) is slightly shallower than the other two.



5

Make up the three internal frames and cut mortises for the Dominos.

7

Cut mortises in each side frame to receive the internal frame Dominos.



With these frames the grain runs in the same direction as the sides, so there's no need to allow for expansion.

#### A simple precaution

As the drawer runners don't run up to the inside face of the side panels, rubbing strips need to be fitted to the outside face of the middle frame runners to prevent the drawers rocking from side to side as they're

opened and closed. These strips are simply glued and screwed in place. Note that they need to be short enough to fit inside the legs, so they're stopped 70mm in from the back edge, **photo 8**.

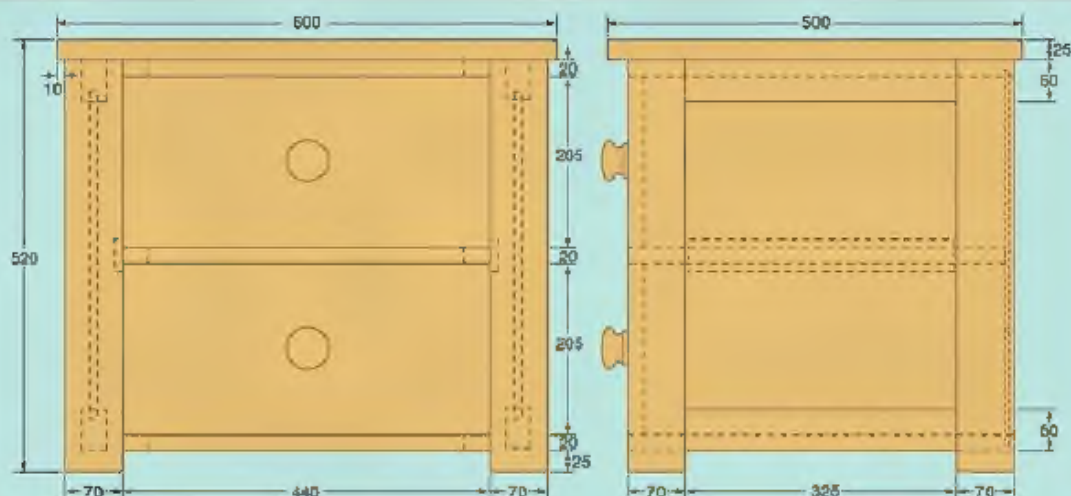
Another detail I attended to at this stage was to cut recesses in the underside of the front rail to take the screws and washers that would later be used to attach the top, **photo 9**.

#### Assembly phase 1

The cabinet can now be dry-assembled. Once the inner frames have been fitted to one side panel, **photo 10**, the plywood back can be cut precisely to size and test-fitted into its grooves. It is important to get a snug fit here, as much of the lateral strength in the cabinet resides in this thin plywood back panel.

The cabinet can now be glued up. There





All measurements in millimetres

## TWO-DRAWER CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Leg	4	495	70	70
Side rail	4	345 (385)	30	30
Side panel	2	394	339	10
Front rail	3	440 (490)	70	20
Top/bottom runner	4	345 (395)	30	20
Centre runner	2	335 (385)	30	20
Back rail	3	325 (375)	50	20
Rubbing strip	2	320	40	10
Top	1	500	500	25
Top fixing battens	2	300	20	20
Back panel (plywood)	1	442	452	4
Drawer front	2	440	205	20
Drawer side	4	400	205	12



8 Add rubbing strips to the middle frame to make the drawers run square

is quite a lot to assemble and speed is of the essence, as glued joints don't like to be disturbed once the glue starts to cure. I find that pouring some glue into an open container and applying it quickly with a 25mm paintbrush helps, **photo 11**. So does having a completely flat surface available to rest the cabinet on as it's cramped up. I placed a piece of old kitchen worktop on my bench, **photo 12**.

## Assembly phase 2

The top has to be fixed to the cabinet in such a way as to allow for movement across the grain. I like to fix the front edge of the top to the framework beneath, so that any movement is taken up at the rear of the cabinet. I had already cut recesses in the underside of the front rail to take the fixing screws and washers. The top then needs to be fixed at the sides and rear.

9

Drill screw holes and countersinks in the underside of the top front rail





**10**  
Dry-assemble the cabinet to this stage and cut the plywood back to fit



**11**  
A cheap paintbrush is an invaluable aid to applying glue quickly



**12**  
The cabinet assembly must be completely square as it is cramped up



**13**  
Make up a couple of filler strips and cut three Domino joints in each one



**14**  
Glue a strip in place between the drawer kicker and the side frame rail



**15**  
Use screws, screw cups and washers to attach the carcasses to the top



**16**  
Assemble each drawer box and test its fit within the carcass



**17**  
Drawer slips hold the bottom panel and allow slimmer sides to be used



**18**  
Screw two drawer stops to each back rail, 20mm in from the edge

I didn't want to drive screws up through the top drawer kickers, so I made up a couple of filler strips and cut three Domino slots in each one, **photo 13**. I then glued them in position between the kickers and the side rails, **photo 14**, and additionally used the Domino to cut some screw slots in the top back rail. If you don't have a Domino, you can cut these slots with the help of a simple jig for the router.

I machined the timber for the top from a single board length, to try to minimise any chance of mismatch in the finished top, then glued and cramped up the 600 x 500mm panel I needed. I then applied

several coats of finishing oil to the underside before fixing it to the cabinet with stainless steel screws, washers and screw cups, **photo 15**.

#### Dovetailed drawers

The drawers were made from oak with a plywood bottom and have 20mm thick fronts and backs. I fitted grooved drawer slips to give the base extra support, and this allowed me to use slimmer 12mm thick drawer sides, **photo 17**; these are dovetailed to the front and back. I used a Leigh dovetail jig to cut the joints as I already had it out for another job. If I had

just a couple of drawers to make, I'd have done them by hand as it's quicker than setting up the jig from scratch.

#### Final stages

All that remained was to turn the two drawer knobs on the lathe, fit them and test-fit in the plywood drawer boxes, **photo 17**. The drawers don't run right up to the back of the unit, so for each drawer I screwed two drawer stops exactly 20mm in from the rear edge of the bottom and middle back rails, **photo 18**.

After many coats of finishing oil, the end product looked superb!